

**ABSTRACT**

An object of the invention is to provide a wavelength allocation method of signal light, which is capable of consecutively allocating signal lights efficiently on wavelength grids, while suppressing degradation in transmission characteristic due to the generation of four-wave mixed light in an optical transmission path. To this end, according to the wavelength allocation method of signal light, the consecutive allocation wavelength number of signal lights to be allocated consecutively on the wavelength grids, is set to different values according to wavelength bands, based on wavelength dependence of a generation amount of four-wave mixed light on the optical transmission path, and the signal lights are allocated consecutively on the wavelength grids in accordance with this consecutive allocation wavelength number, but the signal light is not allocated on at least one wavelength grid adjacent to the wavelength grids on which a group of signal light are allocated consecutively.